

### **Amendments to the Claims**

This listing of claims replaces all prior versions, and listings, of claims in the application.

#### **Listing of claims:**

1. – 3. (cancelled)

4. (currently amended) The system of claim 31, wherein the query formatter is ~~configured to~~ translates functional relationships in the machine representation of the problem statement into semantic relationships.

5. (currently amended) The system of claim 31, wherein the query formatter is ~~configured to~~ reformulates the problem statement into a natural language query or a Boolean query.

6. (previously presented) The system of claim 31, wherein the at least one knowledge base includes a semantic analysis knowledge base.

7. (previously presented) The system of claim 31, wherein the at least one knowledge base is resident on a storage medium co-located with the computer.

8. (previously presented) The system of claim 31, wherein the at least one knowledge base is resident on a corporate server.

9. (previously presented) The system of claim 31, wherein the at least one knowledge base is remotely accessed.

10. (previously presented) The system of claim 31, wherein the at least one knowledge base is a patent collection that is remotely accessed.

11. (currently amended) The system of claim 31, wherein the knowledge search tool ~~is configured to~~ accesses a plurality of knowledge bases selected from a group including:

at least one knowledge base resident on a storage medium co-located with the computer;

at least one knowledge base on a corporate server; and

at least one knowledge base accessible via an internet link.

12. (currently amended) The system of claim 31, wherein the knowledge search tool ~~is configured to~~ submits the query to the at least one knowledge base without intervention by a user.

13. (currently amended) The system of claim 31, wherein:

the problem analysis tool ~~is configured to~~ determines functional relationships between key elements of the ~~system~~ function model; and

the query formatter ~~is configured to~~ reformulates the machine representation of the problem statement by translating the functional relationships into the natural language query.

14. (currently amended) The system of claim 31, wherein:

the problem analysis tool ~~is configured to~~ performs a root cause analysis ~~of the system model that establishes~~ to generate a directed graph having one or more nodes, wherein each node represents a problem statement and has a node edge that represents a cause-effect relationship; and

the query formatter ~~is configured to~~ translates the one or more nodes into the natural language query.

15. (previously presented) The system of claim 11, wherein the at least one knowledge base includes a semantic analysis knowledge base.

16. (cancelled)

17. (Currently amended) The computer program product of claim 32, wherein reformulating the machine representation of the problem ~~includes~~ into a natural query includes translating functional relationships in the machine representation of the problem statement into semantic relationships.

18. (previously presented) The computer program product of claim 32, wherein one or more of the at least one knowledge base is a semantic analysis knowledge base.

19. (previously presented) The computer program product of claim 32, wherein the at least one knowledge base is resident on a storage medium co-located with at least one of the one or more processors.

20. (previously presented) The computer program product of claim 32, wherein the at least one knowledge base is resident on a corporate server.

21. (previously presented) The computer program product of claim 32, wherein the at least one knowledge base is remotely accessible.

22. (previously presented) The computer program product of claim 32, wherein the at least one knowledge base is a patent collection that is remotely accessible.

23. (previously presented) The computer program product of claim 32, wherein accessing at least one knowledge base includes accessing a plurality of knowledge bases comprising two or more of:

at least one knowledge base resident on a storage medium co-located with at least one of the one or more processors;

at least one knowledge base on a corporate server; and

at least one knowledge base accessible by an internet link.

24. (previously presented) The computer program product of claim 32, wherein the method includes submitting the query to the at least one knowledge base without intervention by a user.

25. (Currently amended) The computer program product of claim 32, wherein the method includes:

identifying the problem to be solved includes analyzing functional relationships between key elements of the ~~system~~ function model; and

reformulating the machine representation of the problem statement into the natural language query includes translating the functional relationships into the natural language query.

26. (currently amended) The computer program product of claim 32, wherein the method includes:

identifying the problem to be solved includes performing a root cause analysis of ~~the system model that establishes~~ to generate a directed graph having one or more nodes, wherein each node represents a problem statement and has a node edge that represents a cause-effect relationship; and

reformulating the machine representation of the problem statement into the natural language query includes translating the nodes into the natural language query.

27. (original) The computer program product of claim 23 wherein at least one of said knowledge bases is a semantic analysis knowledge base.

28. (previously presented) The method of claim 29, further comprising presenting the set of solution suggestions via an output device.

29. (Currently amended) A method of obtaining solution suggestions for problems, the method implemented in a computer system having at least one processor and data storage medium, said method comprising:

analyzing a ~~system~~ function model, including identifying a problem to be solved and generating a machine representation of a problem statement representing the problem;

reformulating the machine representation of the problem statement into a natural language or Boolean query; and

accessing at least one knowledge base having problem solutions stored therein, and automatically obtaining a set of solution suggestions from the at least one knowledge base responsive to the query.

30. (Currently amended) A system for obtaining solution suggestions for problems, said system comprising:

at least one processor and at least one storage medium;

a user input device ~~configured to~~ that enables user interaction with at least a portion of a ~~system~~ function model to enable identification of a problem to be solved, represented as a problem statement;

a problem analysis tool ~~configured to~~ that generates a machine representation of the problem statement;

a query formatter ~~configured to~~ that reformulates the machine representation of the problem statement into a natural language or Boolean query; and

at least one knowledge base comprising:

at least one database comprising problem solutions; and

a knowledge search tool ~~configured to~~ that automatically searches the at least one database for a set of solution suggestions responsive to the query.

31. (Currently amended) A system for obtaining solution suggestions for problems, the system comprising:

at least one processor and at least one storage medium;

a problem analysis tool ~~configured to that~~ analyzes a ~~system~~ function model to identify a problem to be solved and to generate a machine representation of a problem statement representing the problem;

a query formatter ~~configured to that~~ reformulates the machine representation of the problem statement into a natural language query;

at least one knowledge base comprising:

at least one database comprising problem solutions; and

a knowledge search tool ~~configured to that~~ automatically searches the at least one database for a set of solution suggestions responsive to the query; and

an output device ~~configured to that~~ presents the set of solution suggestions.

32. (Currently amended) A computer program product stored on at least one storage medium for execution by one or more processors to perform a method of obtaining solution suggestions for problems, said method comprising:

analyzing a ~~system~~ function model, including identifying a problem to be solved and generating a machine representation of a problem statement representing the problem;

reformulating the machine representation of the problem statement into a natural language query; and

accessing at least one knowledge base having problem solutions stored therein, and automatically obtaining a set of solution suggestions from the at least one knowledge base responsive to the query.